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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,693	KAEMMERER, WILLIAM F.	
	Examiner	Art Unit	
	Louis Wollenberger	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-8,10-18 and 20-98* is/are pending in the application.

4a) Of the above claim(s) *2-4,6-8,11-13,15-18,20-23 and 26-84* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,10,14,24,25 and 85-98* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission, including amendments to the claims, filed on 10/1/07 has been entered.

To be clear, the amendments to the claims and specification filed 6/5/07 after Final Rejection have not been entered (37 CFR 1.116).

Status of Application

Applicant's response filed 10/1/07 has been considered. Rejections and/or objections not reiterated from the previous Office Action mailed on 1/5/07 are hereby withdrawn. The following rejections and/or objections are either newly applied or are reiterated and are the only rejections and/or objections presently applied to the instant application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

With entry of the amendment of 10/1/07, Claims 1-4, 6-8, 10-18, and 20-98 are pending. Claims 2-4, 6-8, 11-13, 15-18, 20-23, and 26-84 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions and/or species, there being no allowable generic or linking claim.

Claims 1, 10, 14, 24, 25, and 85-98 are examined herein.

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, U.S. Provisional application 60/429,387, upon which benefit is claimed fails to provide adequate support under 35 U.S.C. 112 for claims drawn to medical systems comprising small interfering RNA, Claims 1, 5, 9, 10, 14, 19, 24, 25, and 85–89. The instant application clearly defines small interfering RNA (pages 14-15) as "double stranded RNA agents" that are "used to trigger RNA interference." As ordinarily used in the art, "small interfering RNA" normally refers to double stranded RNAs, which operate by a different biochemical pathway than ribozymes and antisense (single stranded) RNAs. Thus, antisense, ribozymes, and small interfering RNA are considered to represent distinct molecular agents. The earliest filed priority document in which adequate support is provided for medical systems comprising small interfering RNA is U.S. Provisional application 60/444, 614, filed 2/3/03.

Claim Objections

Claim 1 is objected to because of the recitation "comprising a material which does not interfere with intra-operative brain imaging" introduced into the final line of the claim. It is unclear whether this limitation is intended to refer to the delivery means, siRNA, catheter, or any of the preceding. The element or device specifically comprising the material is unclear.\

Claim 87 is objected because of the awkward phrase "encoding for." The term "encoding" is sufficient.

Objection to the Specification

The amendment filed 10/1/07 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The amendment to pages 9, 14, and 29-35, and the addition of new Fig. 7 and brief description thereof. Additionally, while applicant shows the changes proposed for pages 9 and 29, applicant has not provided any mark-ups of the changes proposed for pages 14 and 30-35. The Examiner is unable to readily determine what changes are to take place therein.

Applicant asserts application 09/872,698, now US Patent 7,189,222, provides support for the added disclosure. While essential material may be incorporated by reference to a US patent or patent application publication, the rules do not permit cutting and pasting selected text from one document into another to produce a new specification. Such changes amount to editing and raises the spectre of new matter. The incorporation by reference includes the entire text of the prior application as originally presented in the prior application. It does not permit the free rearrangement of portions of the text from the prior application into arbitrary positions of the instant application to redescribe and define elements, materials, and schematic drawings that were never defined or described in the first place. One of skill would recognize the prior application as a description of the figures, materials, and methods therein and would read that application as written. Selecting isolated portions of the text from the prior application and arbitrarily inserting it into new positions in the disclosure to cure defects and amend the

specification and change the disclosure results in a new context that is not adequately supported by the specification as filed.

If Applicant intends to rely on disclosure present in a document incorporated by reference, Applicant should simply point to those passages in the document itself, which if in compliance with 37 CFR 1.57 as it pertains to essential subject matter, will be given the full weight thereof without the need for editions to the instant application.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 10, 14, 24, 25, and 85-98 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, the claims are rejected as indefinite because of the recitation "a patient-specific intraoperative mapping means for locating a predetermined location in the brain," which appears in Part b of independent claims 1 and 90. (Dependent claims are rejected therefor.)

The limitation "mapping means for locating a predetermined location in the brain" is being treated under 35 U.S.C. 112, sixth paragraph (see MPEP 2181).

35 USC 112, sixth paragraph, states that "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of

structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

In the instant case, the specification neither expressly nor inherently links or associates the means-plus-function limitation "a patient-specific intraoperative mapping means for locating a predetermined location in the brain" with any specific structure or equivalent thereof.

35 USC §112, sixth paragraph, requires some disclosure of structure in the specification corresponding to the claimed means.

> "[W]hile it is true that the patentee need not disclose details of structures well known in the art, the specification must nonetheless disclose some structure." Default Proof, 412 F.3d at 1302; see also Atmel, 198 F.3d at 1382 ("There must be structure in the specification" and the requirements of §112, ¶ 6 will not be met when there is "a total omission of structure."); Med. Instrumentation, 344 F.3d at 1211 ("If the specification is not clear as to the structure that the patentee intends to correspond to the claimed function, then the patentee has not paid [the price for use of the convenience of broad claiming afforded by §112, ¶ 6] but is rather attempting to claim in functional terms unbounded by any reference to structure in the specification. Such is impermissible under the statute."). "...a bare statement that known techniques or methods can be used does not disclose structure. To conclude otherwise would vitiate the language of the statute requiring "corresponding structure, material, or acts described in the specification." See *Biomedino LLC v. Waters Technologies Corp.*, 83 USPQ2d 1118 (Fed. Cir. 2007).

Accordingly, the claims are considered to be indefinite because one skilled in the art would not be able to identify the structure, material or acts from description in the specification for performing the recited function (MPEP 2181). Therefore, the metes and bounds of the claim are unclear.

Claim Rejections - 35 USC § 112, first paragraph, first paragraph (written description)

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 10, 14, 24, 25, and 85-98 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

Adequate written description support does not exist for the limitation "a patient-specific intraoperative mapping means for locating a predetermined location in the brain," recited in independent claims 1 and 90. (Dependent claims are rejected therefor.)

Adequate written description does not exist in the specification as filed for the structure(s) or equivalents thereof corresponding to the function now recited in the claims. In fact, no structure or equivalent thereof is explicitly identified or described for performing the function now recited. Therefore, the specification as filed does not enable one of skill to immediately envision the structures that would peform the function. As an ancillary result, one of skill would not reasonably conclude from the specification as filed that the inventor was in possession of the structure(s) and all equivalents thereof that would perform the function as of the filing date.

MPEP 2181, Section II, states in part that

"If one employs means plus function language in a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language. If an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112." *In re Donaldson Co.*, 16 F.3d 1189, 1195, 29 USPQ2d 1845, 1850 (Fed. Cir. 1994) (in banc)."
"Whether a claim reciting an element in means- (or step-) plus-function language fails to comply with 35 U.S.C. 112, second paragraph, because the specification does not disclose adequate structure (or material or acts) for performing the recited function is closely related to the question of whether the

specification meets the description requirement in 35 U.S.C. 112, first paragraph. See *In re Noll*, 545 F.2d 141, 149, 191 USPQ 721."

As explained above in the rejection under 35 USC 112, second paragraph, the limitation is being interpreted as a means-plus-function limitation, according to 35 USC 112, sixth paragraph. As further explained above, the specification does not clearly link or associate the limitation with any particular structure or equivalent thereof.

A means- (or step-) plus-function claim limitation is adequately described under 35 U.S.C. 112, para. 1, if the written description adequately links or associates adequately described particular structure, material, or acts to the function recited in a means- (or step-) plus-function claim limitation. See *Biomedino LLC v. Waters Technologies Corp.*, 83 USPQ2d 1118 (Fed. Cir. 2007).

In the instant case this criterion has not been satisfied. A review of the instant application fails to find any description of a structure corresponding to a "mapping means for locating a predetermined location in the brain of patient."

While adequate written description exists for catheters, ports, pumps, and other implantable intracranial drug delivery devices, which may be surgically implanted using conventional stereotactic neurosurgical techniques described in the prior art, explicit written description support does not exist for the particular devices or elements that should be used as a mapping means for locating a predetermined location in the brain.

Accordingly, the instant claims are rejected for lack of written description.

Claim Rejections - 35 USC § 112, first paragraph (New Matter)

Claims 1, 10, 14, 24, 25, and 85-98 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

The amendment to the claims submitted on 10/1/07, introduces the limitations "comprising material that does not interfere with operative brain imaging" and "patient specific intra-operative" into independent claims 1 and 90.

MPEP 2163, Section II, Part A, states in part that there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed, *Wertheim*, 541 F.2d at 262, 191 USPQ at 96; however, with respect to newly added or amended claims, applicant should show support in the original disclosure for the new or amended claims.

Applicant points to application 09/872,698 for support to the claimed limitations. Application 09/872,698 is incorporated by reference at page 29 of the instant specification. The description therein refers to 09/872,698 as disclosing systems and devices that may be used in accordance with the invention. The applications are not said to describe "mapping means" nor "patient-specific intra-operative mapping means."

Applicant is, once again, attempting to edit material out of context, establish new connections, and add new language not found in either document to refine, modify, amend, and further define the claimed invention with no supporting evidence that the invention as originally disclosed and claimed was actually intended to be one that is "patient-specific" and "intra-

operative." In fact these phrases are not expressly found in either application, much less in a specific well defined context teaching one of skill what structures or properties applicant intended to serve as a "mapping means." What specific structures and equivalents thereof actually qualify as an intra-operative patient specific mapping means remains wholly undefined. The claims remain extremely broad, with no clear limits as to what does or does not constitute a mapping means as no exemplary structure or equivalents thereof have been described in the specification, and there is no disclosure in the instant application as originally filed clearly or explicitly explaining that application 09/872,698 or any other incorporated reference describes an intra-operative patient specific mapping means as allegedly contemplated by the applicant. Applicant is retroactively planting phrases and text said to be implicitly or explicitly set forth in related applications at key locations in the instant application so as to more fully set forth the mapping means of the invention which was never adequately described in the first place. Moreover, while an intracranial access device may comprise material that does not interfere with brain imaging, this is but one embodiment or species within an extremely large genus of devices described across several different documents. The limitation has been co-opted to describe a device that was never explicitly contemplated or clearly comprehended by the disclosure as originally filed. Incorporation by reference does not entitle applicant to amend and reconstruct sentences and paragraphs with little more than a statement that the limitation was implicit or that one of skill would appreciate. Without guidance to teach one of skill what the device is, there is no evidence to indicate the invention clearly contemplate the device now claimed at the time of filing.

Accordingly, the instant claims as a whole are rejected for lack of written description support.

Non-Statutory Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

The recent U.S. Court of Appeals Federal Circuit decision in *Pfizer Inc. v. Teva Pharmaceuticals USA Inc.*, 86 USPQ2d 1001 (Fed. Cir. 2008) makes it clear that the protection afforded by 35 USC 121 applies only to divisional applications filed as the result of a restriction requirement.

Claims 1, 10, 14, 24, 25, and 85-97 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-106 of copending

Application No. 10/962,732 (US 2005/0048641) in view Elsberry et al. (US Patent 6,042,579) and Cummings et al. (1999) *Phil. Trans. R. Soc. Lond.* B 354:1079-1081.

The claim limitations "mapping means for locating a predetermined location in the brain of the patient" and "a delivery means for delivering said small interfering RNA" are being treated under 35 U.S.C. 112, sixth paragraph. The claims use the phrase "means for"; the "means for" is modified by functional language; and is not be modified by sufficient structure, material, or acts for achieving the specified function. The claim limitations are written as a function to be performed without reciting the specific structure or material that perform that function (MPEP 2181).

35 U.S.C. 112, sixth paragraph states that a claim limitation expressed in means-plus-function language "shall be construed to cover the corresponding structure…described in the specification and equivalents thereof."

With regard to "mapping means," the instant application fails to explicitly describe any structures or equivalents thereof which may be used as a "mapping means." Not one instance can be found in the specification wherein the Applicant specifically and clearly describes what Applicant intends to be used as the mapping means. Thus, the Examiner must consider whether the disclosure of the structure or material is implicit or inherent in the specification. The disclosure may be implicit or inherent if it would have been clear to those skilled in the art what structure (or material or acts) corresponds to the means (or step)-plus-function claim limitation (MPEP 2181, Section II).

The Examiner submits that "mapping" as it is understood by one of skill in the neurosurgical arts, includes the use of conventional stereotactic surgical techniques such as those disclosed by Elsberry et al. for delivering therapeutic substances to specific locations in the brains of human patients for the treatment of neurodegenerative disorders via the use of implantable catheters. Elsberry et al. provide a "mapping means" in that they provide specific stereotactic coordinates of specific structures in the brain that may be targeted for the delivery of therapeutic agents such as nerve growth factors or any other substance used to influence brain cell activity (see, for example, Table II, column 6). Moreover, the Examiner submits that the delivery means disclosed by Elsberry et al. would serve a dual function, providing both a delivery means and a mapping means.

For purposes of this rejection, an intracranial access device includes a port, intracranial catheter, and a syringe, alone or in combination. A delivery means may be a pump, syringe, or catheter. In the broadest embodiments, claims 1 and 90, for example, a location may something as general as the left hemisphere or as specific as the cerebellar cortex.

The rejection is as follows.

Copending application No. 10/962,732 claims medical systems and methods for treating neurodegenerative disorders such as spinocerebellar ataxia in a patient comprising an comprising an implantable infusion pump, a reservoir, a fluid comprising an RNAi agent, and a catheter. The implantable infusion pump may be either implantable or external, may have a port into which a needle can be inserted to inject a therapeutic agent, and may further have a catheter, and a

catheter port for delivering an RNAi agent to a specific location in the brain. The RNAi agent may be an siRNA directed to SCA1.

Copending Application No. 10/962,732 does not claim a "mapping means" or means for locating a predetermined location in the brain.

Elsberry et al. taught methods and materials for treating neurodegenerative disorders such comprising delivering therapeutic substances such as nerve growth factors to specific locations in the brain of a human using an implantable infusion pump and a stereotactically positioned catheter (see entire document, especially Fig. 1 and claims 1-23).

The system includes a catheter port and a means for periodically refreshing the supply of the nerve growth factors to be delivered to said predetermined infusion site in the brain, and a quantity of drugs to be supplied by a separate catheter and pump.

Elsberry et al. state that the pump may be implanted using conventional stereotactic techniques (col. 2, lines 60-65), and provide specific stereotactic coordinates for several different regions in the brain, including those recited in the instant claims such as the nucleus basalis of meynert (col. 5 and 6). Elsberry et al. specifically describe how such coordinates are determined relative to the medial-lateral dimensions of the brain (col. 6).

Elsberry et al. specifically claim a method for using said apparatus for delivering nerve growth factors for treating Alzheimer's disease, wherein the predetermined sites are any of those recited therein at claim 5. Further, Elsberry et al. also claim a system for treating a neurodegenerative disorder comprising a pump, and a catheter for infusing a therapeutic dosage of one or more nerve growth factors into a predetermined site in the brain (claim 13).

As a US Patent, the claims to methods and systems for treating neurodenegerative disorders are presumed to be fully enabled and supported by the specification (35 USC §282).

Elsberry et al. state that "Those skilled in that art will recognize that the preferred embodiments may be altered or amended without departing from the true spirit and scope of the invention, as defined in the accompanying claims."

Elsbery et al. do not teach that siRNA may be delivered by the devices and methods for treating neurodegenerative disorders. However, it would have been obvious to one of skill in the art at the time that such devices would provide a reliable means for delivering virtually any solution phase therapeutic agent capable of treating or correcting abnormal brain cell functions, including those having a genetic component.

It is clear that the stereotactically positioned catheters and pumps disclosed by Elsberry et al. are not designed exclusively for the agent, but for the directed delivery of said agent to a specific location in the brain.

As shown by Cummings et al. it was known at the time of invention that sipinocerebellar ataxias (SCAs) result from degeneration of the cerebellum, spinal tracts, and brain stem (page 1079). Pathologically, SCA1 is characterized by the degeneration of cerebellar Pukinje cells, inferior olive neurons, and neurons within brainstem cranial nerve nuclei (page 1080). Cummings et al. also taught the correlation between overexpression of ataxin-1 protein containing CAG repeats and ataxia and Purkinje cell pathology (page 1080).

Therefore, one of ordinary skill in the art would conclude that the invention defined in the claims at issue is anticipated by, or would have been an obvious variation of, the invention defined in a claim in the conflicting application.

Claim Rejections - 35 USC § 103

Claims 1, 10, 14, 24, 25, and 85-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elsberry et al. (US Patent 6,042,579) in view of Davidson et al. (US 2004/0023390), and Cummings et al. (1999) *Phil. Trans. R. Soc. Lond.* B 354:1079-1081.

The claim limitations "mapping means for locating a predetermined location in the brain of the patient" and "a delivery means for delivering said small interfering RNA" are being treated under 35 U.S.C. 112, sixth paragraph, as explained above in the double patenting rejection

Elsberry et al. is relied on for the reasons given above in the double patenting rejection. It would have been obvious to one of skill in the art at the time that such devices would provide a reliable means for delivering virtually any solution-phase therapeutic agent, including short interfering RNA, capable of treating or correcting abnormal brain cell functions, including those having a genetic component such as spinocerebellar ataxia.

Elsberry et al. do not teach siRNA directed to SCA1.

Davidson et al. taught methods for making and using viral siRNA expression vectors for treating polyglutamine neurodegenerative disorders, including spinocerebellar ataxia, associated with the abnormal expression of genes such as SCA1, comprising CAG tracts (pages 1-20, particularly paragraphs 180-215 and claim 23). See disclosure at paragraph 181 and Example 1, beginning at page 18. Pharmaceutical compositions suitable for delivery of siRNA into the CNS are also disclosed (pages 17-18). Absent evidence to the contrary, these formulations would not interfere with intra-operative brain imaging. Davidson et al. show and taught that viral siRNA

expression vectors, delivered systemically or by direct injection into the brain, may be used effectively to reduce polyglutamine protein levels in neurons in the brain (paragraphs 209-214).

Cummings et al. supplement and bolster Davidson et al., teaching the strong correlation between the overexpression of the polyglutamine mutant variant of ataxin-1 and the ataxia phenotype, which affects Purkinje cells in the cerbellar region of the brain.

Accordingly, it would have been prima facie obvious to one of skill at the time of invention to use the method and devices of Elsberry et al. to deliver therapeutically effective amounts of an siRNA expression vector into the brain of a patient suffering from ataxia to inhibit the expression of the mutant polyglutamine ataxin-1 protein to treat the conditions associated with its expression for the reasons taught by Davidson et al. and Cummings et al.

Prior Art not relied upon

The following prior art is not relied upon, but is considered pertinent to applicant's disclosure.

- Elsberry (WO 97/40874), who teaches a system for treating neurodegenerative disorders by brain infusion.
- Elsberry et al. (US Patent 5,735,814) and Elsberry et al. (US Patent 5,814,014), who teaches devices for treating neurodegenerative disorders by brain infusion. On page 27 of the instant application, Applicant states that these devices can be used to deliver small interfering RNA in accordance with the present invention.
- "The StealthStation® Treatment Guidance System Fact Sheet" Medtronic, Inc. [online] [retrieved 12/1/06 from www.medtronic.com].

The Fact Sheet states that the StealthStation Guidance system has been in use around the world as of July 2001 and provides a general description of the system. Applicant states in the Remarks filed 11/6/06, page 13, that the term "mapping means" especially with regard to accessing (e.g., surgically accessing) the brain of a live human patient is well-understood in the art. In fact, in 2001, Medtronic introduced a "mapping means" device termed the Medtronic NT StealthStation® TreonTM into the marketplace. This medical system further refines the computerized technologies of multi-dimensional imaging and navigation to enable neurosurgeons to precisely plan, re-plan and visualize a procedure as it proceeds deep within the brain for treating a neurological disorder such as for example SCA1 in a living human patient.

Response to Applicants' Arguments

Applicants' arguments presented on 10/1/07 not specifically addressed above are considered to be moot in view of Applicants' amendments to the claims and/or in view of the new and/or reiterated rejections stated herein, above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Wollenberger whose telephone number is (571)272-8144. The examiner can normally be reached on M-F, 8 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James (Doug) Schultz can be reached on (571)272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Louis Wollenberger/
Examiner, Art Unit 1635
August 9, 2008